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TRAFFIC CALMING MEASURES USED IN CONJUNCTION WITH RED LIGHT CAMERAS

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You asked for information about traffic calming measures that could be used in conjunction with red light cameras.

SUMMARY

Traffic calming refers to the use of physical measures to reduce traffic volume and undesirable driving practices, such as speeding. Many of these measures are designed for roads where vehicles travel at relatively low speeds. Speed bumps and speed “humps”, for example, are used on roads where vehicles travel at speeds of five or up to 25 miles per hour, respectively. Consequently, traffic calming is most common in residential neighborhoods.

This report looks at traffic calming measures that can be implemented on busier thoroughfares, where red light cameras are likely to be used.

We separate these measures into three types: (1) changes to the timing of the traffic signals; (2) other measures that the U.S. Department of Transportation (U. S. DOT) and Institute of Transportation Engineers (ITE) recommend to reduce red light running; and (3) traffic calming recommendations made for state highways and busy streets proposed by a joint UConn/University of Maine report. Additional information on traffic calming can be found in OLR Reports [2006-R-0567](#), [2010-R-0020](#), and [2011-R-0278](#).

TRAFFIC SIGNAL TIMING

Increasing Yellow Traffic Signal Intervals

Several studies have found that increasing the length of the yellow signal interval helps reduce red light running by allowing vehicles more time to clear an intersection before the light turns red. One [study](#) notes that increasing the yellow light interval helps reduce red light running, but that subsequent installation of red light cameras reduced red light running even further. (Although there is no single, standardized, method for setting yellow intervals, traffic engineers generally consider a variety of factors, such as approach speed, braking time, and drivers' reaction time, in determining these intervals.)

Implementing Red Light Clearance Intervals

Giving traffic in all directions an all-red signal allows vehicles to clear an intersection before opposing traffic gets a green light. A 2004 Minnesota transportation department [study](#) found that implementing all-red clearance intervals resulted in a short-term (one-year) reduction in crash rates, but that crash rates returned to pre-implementation levels after that time.

OTHER ENGINEERING COUNTERMEASURES TO REDUCE RED LIGHT RUNNING

The U.S. DOT and ITE address traffic light timing, and other engineering measures, in its [Engineering Countermeasures to Reduce Red Light Running](#) issue brief. The issue brief groups these countermeasures into the following four categories, with examples of countermeasures for each.

Improving Signal Visibility

Traffic signal visibility can be improved by:

1. ensuring that traffic signals are overhead, rather than pole-mounted;
2. switching to LED signal lenses, which are energy efficient, brighter than incandescent bulbs, and have a longer life; and
3. installing “backplates” that improve signal visibility by providing a black background behind the traffic lights.

Increasing the Likelihood of Stopping

Techniques used to increase the likelihood that drivers will stop include installing:

1. warning signs or flashing lights in advance of the traffic signals, and
2. “rumble strips” which provide an audible warning to the driver (these may not be suitable for residential areas).

Signal Optimization

This includes:

1. coordinating traffic signals in sequence (“If drivers are given the best signal coordination practical, they may not be as compelled to beat or run a red signal,” according to the issue brief);
2. proper timing of signal cycles/clearance intervals based on engineering studies of particular intersections (longer intervals give drivers more time to cross an intersection, but cycles that are too long may frustrate impatient drivers and lead to more red light running);
3. lengthening the yellow signal interval or installing an all-red interval during which traffic in all directions must stop (as noted above); and
4. “dilemma zone” protection in which a vehicle sensor automatically extends the duration of a green signal if it detects a driver cannot safely stop before the onset of the yellow signal.

Eliminating the Need to Stop

Eliminating the need to stop means fewer instances of red light running. This can be done by:

1. removing a traffic signal whose use is no longer necessary because of a change in traffic patterns; or
2. installing a “roundabout” or traffic circle to change the traffic pattern.

Other reports dealing with this issue recommend such measures as:

1. restricting or eliminating right turns on red at troublesome intersections, or alternatively, designating right-turn-only lanes;
2. setting up a temporary radar trailer or permanent radar speed sign to display the speed of oncoming vehicles, encouraging speeders to slow down; and
3. conducting a “road safety audit” in which independent road safety specialists examine specific roads and intersections and suggest ways to improve road safety.

OTHER TRAFFIC CALMING MEASURES

In [*Traffic Calming of State Highways: Application New England*](#), researchers from UConn and the University of Maine, who looked at traffic calming methods and surveyed Connecticut residents about them, note that traffic calming measures pose more difficulties on major thoroughfares than in residential areas because they must allow for reasonable comfort at posted speeds and for rapid travel by emergency vehicles.

Among their suggestions for these roads:

1. speed tables, which are raised surfaces 22 feet long in the direction of travel, consisting of gradual six foot ramps at each end of a raised 10 foot level surface (these have gentler grades than speed humps);
2. median dividers, which slow traffic by making roads narrower, (but median dividers also reduce sight lines, and narrow lanes may not be suitable for very busy roads); and
3. winding patterns, which requires rearranging road alignment to give a street an “S” shape. (Other studies suggest a “lateral shift” in which the roadway alignment only shifts once –an illustration of a lateral shift can be found in [*Guidelines for Traffic Calming*](#).)

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